



**ISEA2020**

<MTL> CONNECT · MONTREAL · CANADA

# WHY SENTIENCE?

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**26<sup>th</sup>**  
**International  
Symposium on  
Electronic Art**  
**ISEA2020**

# PROCEEDINGS

**OCTOBER 13-18, 2020**  
**ONLINE FROM MONTREAL, CANADA**

AN EVENT BY

**PRINTEMPS  
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# 26<sup>th</sup> International Symposium on Electronic Art ISEA2020

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On behalf of Printemps numérique (Montreal Digital Spring), our partner institutions, and the organizing committee, we are proud to present the ISEA2020 Online: Why Sentience? proceedings. The 26th International Symposium on Electronic Art is the first ISEA edition to be held entirely online and will take place in tandem with the second edition of MTL connect: Digital Week (Printemps numérique's own online symposium), and will act as the latter's creativity pavilion.

We are living in unprecedented times—the global COVID-19 pandemic, with its ensuing social distancing measures, economic shutdowns, sanitary rules and travel restrictions—and as a result the planning for the symposium was swiftly reconfigured to produce what we consider to be its most innovative iteration. The International Symposium on Electronic Art belongs in the digital space, where it can be accessible to all regardless of zone or continent; it is not only suitable but inevitable that the event should move to an online platform, where participants and presenters will reconsider in a myriad of imaginative and surprising ways the conduits of creative information dissemination and exchange.

The online event will consist of four full days of 12 hours of presentations on three different live streams: 108 full papers, 96 short papers, 24 panels and 18 posters, selected from nearly 1000 submissions from 58 countries. Our rich and interdisciplinary programme continues on the weekend with instructive workshops. In addition to this, ISEA will be hosting an entirely virtual series of exhibitions, based on the following themes and their correlation with the symposium's throughline, Why Sentience? : Animality,

The Ecosophic World, Politics of Sentience, Matter's Mattering, The Planetary, Machinic Sense & Sensibility, and Sentient Difference. Happening in tandem with the online offerings, ISEA will be physically present in its host city, Montreal, with in-situ exhibitions and performances at Les maisons de la culture Claude-Léveillé, Janine-Sutto, and Côte-des-Neiges. This hybrid programming represents an exact reflection of our current societal *modus operandi* : full online connection, limited physical presence, for the optimal reach and impact in our local communities and those at large.

An extraordinary effort and help is required in organizing an International Symposium such as ISEA, especially during a global pandemic. Printemps numérique would like to thank Erandy Vergara, for her extraordinary ability and leadership to guide the team and work together with the Academic and Artistic Chairs and Committees, specially her behind-the scenes work managing the content and form of ISEA2020 Online. We also would like to thank the academic chairs Christine Ros and Chris Salter, whose insight and vision regarding the 26th edition's theme, Why Sentience, were both essential and without comparison, as well as Manuelle Freire, who all together curated the impressive academic programme and talks. Thank you the artistic co-chairs Erandy Vergara, Alice Jim and Caroline Andrieux for their rigorous yet open spirit in making the final selection of ISEA2020's Juried Selection. A deeply appreciative thank you to the ISEA2020 International Program Committee (IPC) and Artistic Jury. Thank you to the ISEA team for their invaluable work, patience, and endless hours devoted to finding solutions for unprecedented challenges, and for their

on-the-spot creativity and flexibility when it was crucial to getting the job done: Pauline Barthe, Maximilien Briat Martin, Sylvaine Chassay, Stephanie Creaghan, Margaux Davoine, Pascal Dufaux, Iriana Rakotobe, Marine Villedieu.

We would also like to thank the supporting institutions and various partners, without whom the symposium would not be possible: the Gouvernement du Québec (Ministère de la Culture et des communications and the Fonds d'initiative et de rayonnement de la métropole), the Conseil des arts et des lettres du Québec, Ville de Montréal, Tourisme Montréal, le Conseil des arts du Canada, le Conseil des arts de Montréal, Patrimoine Canadien, NAD (École des arts numériques, de l'animation et du design), Concordia University, Synthèse, Destination centre-ville, Reflector, ISEA International, the University of Brighton, Maison de la culture Claude-Léveillée, Maison de la culture Janine Sutto, Maison de la culture de Côte-des-Neiges, Maison du développement durable, Sensorium: Centre for Digital Art and Technology (York University) le Consulat de France, OFQJ France (Office franco-québécois pour la jeunesse), Goethe-Institut Montreal, Sporobole, New Media Gallery, Manifestations Festival, Scopitone Festival, Composite, Milieux Institute, ELEKTRA, Centre PHI, Espace art actuel, Ciel variable and Esse.

Lastly, ISEA2020 would like to thank all our participants, artists and scholars who applied to the symposium back in December of 2019 for your willingness to continue to work with us and evolve with us as we transitioned to the new online format. Your understanding and capacity to adapt are what made the symposium the success that

it is. Your generous and insightful reflections on sentience proved more relevant than ever in the face of the pandemic, and we are eternally grateful for your contribution, participation, and adaptability.

**Mehdi Benboubakeur**

EXECUTIVE DIRECTOR, PRINTEMPS NUMÉRIQUE  
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In late August 2019, when the ISEA 2020 academic committee began discussing the theme of “Why Sentience”? little did we know how prescient the topic would become. With the initial themes tossed around – “animality,” “the politics of sentience,” “sentient difference” and “matter’s mattering” – we were trying to capture the significance of a broader symbiotic turn taking place in the technoscientific arts, humanities and social sciences – the term that the late biologist Lynn Margulis used to describe “the living together in physical contact of organisms of different species.” [1] Living together, however, involves sensing together – where the etymology of the Latin word *sentientem* signifies being “capable of feeling,” not only for ourselves but also for others. But we weren’t wholly satisfied with the theme of “sentience” alone – we sought to turn it into a question to demonstrate that living together as different species is not easy, especially among entities and things we wouldn’t necessarily consider “like us”: nonhuman animals, plants, bacteria but also machines and the Earth itself. By making sentience into the question of “why sentience,” we thus hoped to provoke a debate around two core issues: (1) why is sentience something that presently occupies many artists, scholars and scientists and, (2) what degree and nuance of difference would a deeper exploration of sentience imply?

This was in August 2019. One year later, we are living through a triple catastrophe: the novel coronavirus, the resulting economic collapse and the worldwide unrest brought upon by the exposure and explosion of systematic racism, as well as gender-based violence. These crises have resulted in a major transformation of human and nonhuman life, bringing the theme of ISEA 2020 into a new perspective. It is not that the virus – an invisible entity that some 25% of US citizens (as well as others) think has been invented and planned by a worldwide conspiracy but that has visibly wreaked havoc across the world – is unprecedented.

From the Black Death that eliminated at least 60% of Europe’s population between 1346-1353 and the 40-100 million lost during the Spanish Flu, to 2003’s SARS epidemic, we as humans have long had to live with the otherness of the bacterial and the viral. As historian Mike Davis wrote with uncanny foresight in 2005 in *The Monster at our Door*, “Human-induced environmental shocks—overseas tourism, wetland destruction, a corporate ‘Livestock Revolution’, and Third World urbanization with the attendant growth of megaslums—are responsible for turning influenza’s extraordinary Darwinian mutability into one of the most dangerous biological forces on our besieged planet.” [2] What, however, is unprecedented is the planetary scale and speed of this entanglement of contemporary conditions in which socio-technical-political-economic systems are so deeply and fundamentally intertwined with and influencing each other.

But what does this global crisis we are all living through have to do with the theme of Why Sentience? First, the “pandemic condition” has demonstrated that viral, machinic and terrestrial forces are indeed symbiotic. For example, a May 2020 Science article reported on a global “quieting” taking place as the amount of “anthropogenic” (human made) vibrations fell by almost 50% due to the effective shutdowns of the world economy. Utilizing a network of 268 seismographic sensors in 117 countries, geophysicists at Imperial College London could observe a literal “wave of silence” sweeping across the globe from China to Europe to Australia to North and South America as transport networks, football games, air traffic and effectively stopped. This near planetary reduction in noise catalyzed by the global shutdown and picked up by machine-automated sensors thus shows the close coupling of technical, natural and human worlds. Meanwhile, the media has also been filled with stories of renewal – the return of the natural world in the canals of Venice, the purifying of air in

normally pollution-choked global cities or the increase in birdsong, usually masked out by the sound of transport infrastructure.

At the same time, if sentience signifies “the ability to feel,” the crisis has also revealed the inability to feel – to sense the plight of others. As Davis argues, “The essence of the avian flu threat ... is that a mutant influenza of nightmarish virulence—evolved and now entrenched in ecological niches recently created by global agro-capitalism—is searching for the new gene or two that will enable it to travel at pandemic velocity through a densely urbanized and mostly poor humanity.” [3] The ingrained injustices of the colonial past and the repeated and acute amplification of these through our pandemic present thus compel us to address the hard questions asked by the Cameroonian philosopher Achille Mbembe concerning what he calls “the ordeal of the world” – “Can the Other, in light of all that is happening, still be regarded as my fellow creature? When the extremes are broached, as is the case for us here and now, precisely what does my and the other’s humanity consist in? The Other’s burden having become too overwhelming, would it not be better for my life to stop being linked to its presence, as much as its to mine? Why must I, despite all opposition, nonetheless look after the other, stand as close as possible to his life if, in return, his only aim is my ruin?” [4]

These questions are not the usual bill of fare for ISEA, which has long been focused on the relationship between technology and the arts. Indeed, in these proceedings you will find this focus again – along with perhaps something new: critical positions in race and anti-racism studies, queer studies and disability studies, Indigenous knowledge, eco-criticism, reflections and interrogations of the histories and geographies, places and non-places, temporalities, processes, and residual colonialisms of sentience through an international cross section of current explorations in the media arts and technological aesthetics. As philosopher

Bernard Stiegler (1952–2020), the great pharmacologist of technology who recently left us, argued: now is perhaps the time to think as a form of healing.

Like most cultural events in 2020, ISEA 2020 is thus both a response to crisis and an experience with a not yet realized imaginary. Experience here is used in the French sense of the word: as both an experiment, an attempt and an experience. Through these contributions from scholars and creators from across the world, it is our hope that the question of why sentience – of not only sensing the world but also acting with it – can be a response to our more than uncertain future.

**Christine Ross**  
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#### NOTES

- [1] Margulis, Lynn. *The Symbiotic Planet: A New Look at Evolution*. New York: Basic Books, 1988, 3.
- [2] Mike Davis, *The Monster at our Door: The Global Threat of Avian Flu*. New York/London: New Books, 2005, 25.
- [3] Davis, 26.
- [4] Achille Mbembe, *Necropolitics*. Durham: Duke University Press, 2019, 2–3.

### **Animality**

Animality treats of the non-human and beyond human senses, of expanded notions of aliveness, panpsychism and hylozoism in species other than the humans of ISEA2020. A few non-humans are accepted at ISEA2020, just not as presenters.

### **The Ecosophic World**

The theme Ecosophic World proposes explorations of sentience understood within the entanglements of scientific, environmental, and multispecies ecologies, and their current crises. Case-studies of symbiotic and expanded ecosystems, both natural and human-made will be explored in 10 different sessions at ISEA2020.

### **Machinic Sense and Sensibility**

Machinic Sense and Sensibility saw a great deal of proposals about the autonomy and agency, and even intentionality of robotic and digital creations. Presentations in this theme take on both the sentience of machines and sentience through machines.

### **Sentient Difference**

Sentient Difference shines a light on ways of navigating the social, natural and materials worlds that go beyond or against normativity in regards to race, gender, queer and trans, and (dis)ability.

### **Matter's Mattering**

Matter's Mattering brings forward the tangible, materials things of sentience: the bodies, circuits, infrastructures, matter, how they come to be and the place they take in modalities of engagement and sentience.

### **The Politics of Sentience**

The Politics of Sentience was tackled by some of the most critical scholars who will present their takes on the post-truth, post-sense, sensorization, surveillance, racism, weaponization, control, inequality, re-bordering, capitalism, neo-liberalism, other isms and the institutions of knowledge creation and management of today.

### **The Planetary**

The Planetary: few but worthwhile proposals rethink the global to reaffirm, through creation, the aesthetics of sharing in the global currents and streams of the natural elements, shared resources, beneath and above this planet's surface.



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# FULL PAPERS



# Social Justice & Artificial Intelligence

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## Abstract

This paper discusses the argument that the adoption of artificial intelligence (AI) technologies benefits the powerful few, focussing on their own existential concerns. The paper will narrow down the analysis of the argument to jurisprudence (i.e. the philosophy of law), considering also the historical context. We will discuss the construction of the legal system through the lens of political involvement of what one may want to consider to be powerful elites. Before discussing these aspects we will clarify our notion of “powerful elites”. In doing so we will be demonstrating that it is difficult to prove that the adoption of AI technologies is undertaken in a way which mainly serves a powerful class in society. Nevertheless, analysing the culture around AI technologies with regard to the nature of law with a philosophical and sociological focus enables us to demonstrate a utilitarian and authoritarian trend in the adoption of AI technologies. The paper will conclude by proposing an alternative, some might say practically unattainable, approach to the current legal system by looking into restorative justice for AI crimes, and how the ethics of care could be applied to AI technologies.

## Keywords

power elites, cyborg, artificial intelligence, restorative justice, legal positivism, natural law, disciplinary power, ethics of care, privacy

## Introduction

In order to lay the foundations for a discussion around the argument that the adoption of artificial intelligence (AI) technologies benefits the powerful few (Chaslot, 2016; Morozov, 2018), focussing on their own existential concerns (Busby, 2018; Sample, 2018a), the paper will narrow down the analysis of the argument to social justice and jurisprudence (i.e. the philosophy of law), considering also the historical context. The paper explores the notion of *humanised artificial intelligence* (Kaplan & Haenlein, 2019; Legg & Hutter, 2007) in order to discuss potential challenges society might face in the future. The paper does not discuss current forms and applications of artificial intelligence, as, so far, there is no AI technology (Bostrom, 2014), which is self-conscious and self-aware, being able to deal with emotional and social intelligence. It is a discussion around AI as a speculative hypothetical entity. One could then ask, if such a speculative self-conscious hardware/software system were created at what point could one talk of personhood? And what criteria could there be in order to say an AI system was capable of committing AI crimes?

In order to address AI crimes, the paper will start by outlining what might constitute personhood in

discussing legal positivism and natural law. Concerning what constitutes AI crimes the paper uses the criteria given in King et al’s paper *Artificial Intelligence Crime: An Interdisciplinary Analysis of Foreseeable Threats and Solutions* (King, Aggarwal, Taddeo, & Floridi, 2018), where King et al coin the term *AI crime*, mapping five areas in which AI might, in the foreseeable future, commit crimes, namely:

- commerce, financial markets, and insolvency
- harmful or dangerous drugs
- offences against persons
- sexual offences
- theft and fraud, and forgery and personation

Having those potential AI crimes in mind, the paper will discuss the construction of the legal system through the lens of political involvement of what one may want to consider to be powerful elites. Before discussing these aspects the paper will clarify the notion of “powerful elites”. In doing so the paper will be demonstrating that it is difficult to prove that the adoption of AI technologies is undertaken in a way which mainly serves a powerful class in society. Nevertheless, analysing the culture around AI technologies with regard to the nature of law with a philosophical and sociological focus enables one to demonstrate a utilitarian and authoritarian trend in the adoption of AI technologies (Goodman, 2016; Haddadin, 2013; Hallevy, 2013; Pagallo, 2013).

The paper will base the discussion around Crook’s notion on “power elites” (2010), in Media Law and Ethics (Crook, 2009), and apply it to the discourse around artificial Intelligence and ethics. Following Crook the paper will introduce a discussion around power elites with the notions of legal positivism and natural law, as discussed in the academic fields of philosophy and sociology. The paper will then look, in a more detailed manner, into theories analysing the historical and social systematisation, or one may say disposition, of laws, and the impingement of neo-liberal (Parikh, 2017) tendencies upon the adoption of AI technologies. Pueyo demonstrates those tendencies with a thought experiment around superintelligence in a neoliberal scenario (Pueyo, 2018). In Pueyo’s thought experiment the system becomes techno-social-psychological with the progressive incorporation of decision-making algorithms and the increasing opacity of such algorithms (Danaher, 2016), with human thinking partly shaped by firms themselves (Galbraith, 2015). The regulatory, self-governing potential of AI algorithms (Poole, 2018; Roio, 2018; Smith, 2018) and the justification by authority of the current adoption of AI technologies within civil society will be analysed next. The paper will propose an alternative, some might say practically unattainable, approach to the current legal system by looking into restorative justice for AI

crimes (Cadwalladr, 2018), and how the ethics of care, through social contracts, could be applied to AI technologies. In conclusion the paper will discuss affect (Olivier, 2012; Wilson, 2011) and *humanised artificial intelligence* with regards to the emotion of shame, when dealing with AI crimes.

## Legal Positivism and Natural Law

In order to discuss AI in relation to personhood this paper follows the *descriptive psychology* method (Ossorio, 2013) of the *paradigm case formulation* (Jeffrey, 1990) developed by Ossorio (1995). Similar to how some animal rights activists call (Mountain, 2013) for certain animals to be recognised as non-human persons (Midgley, 2010), this paper speculates on the notion of AI as a non-human person being able to reflect on ethical concerns (Bergner, 2010; Laungani, 2002). Here Schwartz argues that “it is reasonable to include non-humans as persons and to have legitimate grounds for disagreeing where the line is properly drawn. In good faith, competent judges using this formulation can clearly point to where and why they agree or disagree on what is to be included in the category of persons” (2014).

According to Ossorio (2013) a deliberate action is a form of behaviour in which a person a) engages in an intentional action, b) is cognizant of that, and c) has chosen to do that. Ossorio gives four classifications: ethical, hedonic, aesthetic, and prudent as fundamental motivations. Ethical motivations, as well as aesthetic motivations, can be distinguished from prudent (and hedonic) motivations due to the agent making a choice. “Aesthetic and ethical motivations are only relevant when deliberate action is also possible since aesthetic and ethical action require the eligibility to choose or refrain, to potentially deliberate about the desirable course to follow. In the service of being able to choose, and perhaps think through the available options, a person’s aesthetic and ethical motives are often consciously available” (Schwartz, 1984)

In the fields of philosophy and sociology countless theories have been advanced concerning the nature of law, addressing questions such as: Can unethical law be binding? Should there be a legal code for civil society? Can such a legal code be equitable, unbiased, and just, or, is the legal code always biased? In the case of AI technologies one can ask whether the current vision for the adoption of AI technologies is a vision that benefits only the powerful elites. To address the question one needs to discuss the idea of equality. Reference is made to Aristotle’s account on how the legal code should be enacted in an unbiased manner (Aristotle, 1981). Aristotle differentiated between an unbalanced and balanced application of the legal code, pointing out that the balanced juridical discussion of a case should be courteous. Here, as with the above mentioned animal rights activists, in *Dependent Rational Animals* MacIntyre (2001) argued, drawing on Aquina’s (2006) discussion of misericordia, for the recognition of our kinship to some species calling for the “virtues of acknowledged dependence” (MacIntyre, 2013). Austin, on the other hand, suggests that the legal code is defined by a higher power, “God”, to establish justice over

society. For Austin the legal code is an obligation, a mandate to control society (Austin, 1998).

Hart goes on to discuss the social aspect of legal code and how society apprehends the enactment of such legal code (Hart, 1961). Hart argues that the legal code is a strategy, a manipulation of standards accepted by society. Contrary to Hart, Dworkin proposes for the legal code to allow for non-rule (Dworkin, 1986) standards reflecting ethical conventions of society. Dworkin discusses legislation as an assimilation of these conventions, where legislators do not define the legal code, but analyse the already existing conventions to derive conclusions, which then in turn define the legal code. Nevertheless, Dworkin fails to explain how those conventions come into being. Here for Kelsen (1967, 2009) legal code is a product of the political, cultural and historical circumstances society finds itself in. For Kelsen the legal code is a standardising arrangement which defines how society should operate (Kelsen, 1991).

The paradigm case (Ossorio, 2013) allows for the potential AI as non-human persons (Putman, 1990; Schwartz, 1982). Referring to the paradigm case method allows one to work out where parties are in agreement or disagreement concerning what constitutes a person. Here social contract theories, as defined and discussed below, might serve to explain and analyse how legal codes deal with the emergence of legal issues concerning AI technologies or AI crimes. Following Ossorio (1995) since persons act consciously, they are motivated by ethical, aesthetic, prudent and hedonic motivations: at the same time, social contract(s) allowing persons to act in patterns of significance, giving meaning to one’s actions. AI can be interpreted as automated distribution systems, using data drawn from a ‘datasphere’, which could easily be imagined continuously operating without human interference. Thus, a more particular definition of ‘datasphere’ would emphasise how a vast amount of data circulates, while only becoming meaningful when viewed in the context of a social contract. In other words, the transformation of ‘data’ into ‘meaning’ can always be seen to take place within a social contract. For example, a protocol extracting data always has to be configured, i.e. socially or politically agreed upon. Legal or activist interventions thus always interpellate the datasphere. dataspheres include all forms of data that exist in the public domain and public spheres. This data becomes meaningful only when actors interpret it. Such instances of interaction are always in some ways social.

In that sense a legal system, social contracts, aiming to control the dataspheres, needs to be tailored carefully because the situation as being controlled by the most driven producers and consumers. The old distribution model is so impoverished that it chooses the safest route. Applying the notion of ‘social contracts,’ the notion of open and distributed sharing can be reinforced as an overall heuristic and social ethos. One can even elaborate upon the idea of slavery, extending it to the idea of social contracts with reference to Jean-Jacques Rousseau’s *Social Contract*, which states: “The words ‘slavery’ and ‘right’ are contradictory, they

cancel each other out. Whether as between one man and another, or between one man and a whole people, it would always be absurd to say: I hereby make a covenant with you which is wholly at your expense and wholly to my advantage" ([1762] 1968, p. 58).

"Man is born free; and everywhere he is in chains", begins Rousseau's work of political philosophy, *The Social Contract* (1968). Rousseau (Dart, 2005; Hampsher-Monk, 1992) aimed to understand why "a man would give up his natural freedoms and bind himself to the rule of a prince or a government" (Bragg, 2008). This question of political philosophy was widely discussed in the 17th and 18th centuries, as revolution was in the air all over Europe, particularly in France 1789. In the 18th century Rousseau published *The Social Contract*. Rousseau thought that there is a conflict between obedience and persons' freedom and argued that our natural freedom is our own will. Rousseau defined the social contract as a law 'written' by everybody (Roland, 1994). His argument was that if everybody was involved in making the laws they would only have to obey themselves and as such follow their free will. How could persons then create a common will? For Rousseau this would only have been possible in smaller communities through the practice of caring for each other and managing conflicts for the common good – ultimately through love. In *The Art of Loving* Erich Fromm reminds us that "love is not a sentiment which can be easily indulged in by anyone ... [S]atisfaction in individual love cannot be attained without the capacity to love one's neighbour, without true humility, courage, faith and discipline" (1956, p. xix). Rousseau imagined a society the size of his native city of Geneva as an ideal ground for the implementation of social contract theory. Ironically it was the French who, through their revolutionaries, implemented social contract theory. Nevertheless, the French people read it differently, as *imposing* social contracts onto the persons. The mass-scale imposition of contracts compromised their non-mandatory status.

In the 20<sup>th</sup> century, moral and political theory around the social contract had a revival with John Rawls' *A Theory of Justice* (2005) and David Gauthier's *Morals by Agreement* (1986). Gauthier argues after Thomas Hobbes (1651) and explains that there can be morality in our society without the state having to impose morality with the help of external enforcement mechanisms. For Gauthier rationality is the key for cooperation and for following agreements made between different parties. Celeste Friend states in *Social Contract Theory* (2004) that feminist philosophers criticise social contract theory for not reflecting moral and political lives correctly and completely, and for the contract itself being "parasitical upon the subjugations of classes of persons" (2004). In a more critical approach to rationalized contracts, in *The Sexual Contract* Carole Pateman argues that "lying beneath the myth of the idealized contract, as described by Hobbes, Locke, and Rousseau, is a more fundamental contract concerning men's relationship to women" (Friend, 2004). Similarly, for Pateman, "[t]he story of the sexual contract reveals that there is good reason why 'the prostitute' is a female figure" (1988, p. 192). The feminist philosophers Annette Baier (1988,

1995) and Virginia Held (1993, 2006) criticise social contract theory for not demonstrating fully what a moral person should be and how this affects relationships. Baier argues that Gauthier does not reflect on the full spectrum of human motivations and their psychology, that he fails to see that there is a dependency on certain relationships (like mother-child) before one can enter into those contracts, as described in Baier's expression "the cost of free milk" (1988). Held, as quoted by Friend, even goes so far as to argue that "contemporary Western society is in the grip of contractual thinking" (2004).

In *The Racial Contract*, Charles Wade Mills (1997) inspired by *The Sexual Contract* argues that non-whites have similar problems with the class society as women, both sets of conflicts and suppression deriving from a patriarchal mindset. For Mills there is a 'racial contract' which is more important to the industrialized part of the world than the social contract, which one might want to consider in relation to humanised artificial intelligent systems. "This racial contract determines in the first place who counts as fully moral and political persons, and therefore sets the parameters of who can 'contract in' to the freedom and equality that the social contract promises" (Friend, 2004). The subject of the Debian *Social Contract* (2004) might very well be the one who writes most of the code for the data sphere and defines AI technologies: the white male (Knight, 2017). Taking the above criticism regarding the sexual and the racial contract on board one could extend the discussion on social contracts with the notion of *Open Contracts*. First one needs to look into the current *Debian Social Contract* and the issue of privacy with regard to Intellectual Property (Ristroph, 2009). The Debian Foundation is one of the biggest communities for the *Linux* (Torvalds, 2002) operating system. The beginning of the Debian *Social Contract* for the FLOSS community states:

Our priorities are our users and free software. We will be guided by the needs of our users and the free software community. We will place their interests first in our priorities. We will support the needs of our users for operation in many different kinds of computing environments. We will not object to non-free works that are intended to be used on Debian systems, or attempt to charge a fee to people who create or use such works. We will allow others to create distributions containing both the Debian system and other works, without any fee from us. In furtherance of these goals, we will provide an integrated system of high-quality materials with no legal restrictions that would prevent such uses of the system. (2004) The idea of the Debian *Social Contract* could be extended to AI technologies, in the form of Open Contracts, suggesting similar principles that can be applied to free and open source software. One can argue that these would be a pre-condition for 'ethical' AI technologies. With open contracts such as the Debian *Social Contract* in place, various communities can start discussing, experimenting with and practising the production, distribution, and sharing of AI technologies. Although this sounds like a promising scenario one also has to be critical, as these alternatives can be vulnerable to corruption. One could support an Open Contract practice, and suggest that a feminist notion of

'restorative justice' (Christie, 1977a; Crook, 2009) might serve to judge *Open Contracts*, by applying the notions of solidarity and care as principles of judicial practice. However the concern is how to move from an abstract idea of open contracts to a concrete legislation which could enable a AI technology production that is not deemed antithetical, or oppositional to the current judicial system, by formulating a set of ground rules and protocols that will allow AI communities to function and prosper. One could argue that this can be done by defining the independent terms and conditions, namely free and open licenses. Social contracts and laws will eventually be defined for these dataspheres, but until then power elites will try to appropriate every piece of AI technology in accord with the old, non-efficacious, "IP legislation" (Electronic Frontier Foundation, 2009).

Nevertheless, in trying to evaluate the argument that the adoption of AI technologies is a process controlled by powerful elites who wield the law to their benefit, one also needs to discuss the notion of power elites. Chamblis and Seidman argue that powerful interests have shaped the writing of legal codes for a long time (1982). However, Chamblis and Seidman also state that legislation derives from a variety of interests, which are often in conflict with each other. One needs to extend the analysis not only to powerful elites, but one also needs to examine the notion of power itself, and the extent to which power shapes legislation, or, on the contrary, if it is legislation itself that controls power. In an attempt to identify the source of legislation, Weber argues that legal code is powerfully interlinked with the economy. Weber goes on to argue that this link is the basis of capitalist society (Weber, 1978). Here one can refer back to Marx's idea of materialism and the influence of class society on legislation (Marx, 1990). For Marx legislation, legal code, is an outcome of the capitalist mode of production (Harris, 2018). Marx's ideas have been widely discussed with regards to the ideology behind the legal code. Nevertheless Marx's argumentation limits legal code to the notion of class domination. Here Sumner extended on Marx's theories regarding legislation and ideology and discussed the legal code as an outcome of political and cultural discussions, based on the economic class domination (Sumner, 1979). Sumner expands the conception of the legal code not only as a product of the ruling class but also as bearing the imprint of other classes, including blue-collar workers, through culture and politics. Sumner argues that with the emergence of capitalist society, "the social relations of legal practice were transformed into commercial relations" (ibid: 51). However, Sumner does not discuss why parts of society are sidelined by legislation, and how capitalist society not only impacts on legislation, but also has its roots in the neo-liberal writing of legal code.

To apprehend how ownership, property and intellectual rights became enshrined in legal code and adapted by society one can turn to Locke's theories (1993). Locke argued that politicians ought to look after ownership rights and to support circumstances allowing for the growth of wealth (capital). Following Locke one can conclude that contemporary society is one in which politicians influence legislation in the interest of a powerful upper-class – a neo-liberal society. Still, one

needs to ask, should this be the case, and should powerful elites have the authority over legal code, how legislation is enacted and maintained?

### The Disciplinary Power of Artificial Intelligence

In order to discuss these questions one has to analyse the history of AI technologies leading to the kind of "humanised" AI system this paper posits. Already in the 50s Turing, the inventor of the Turing test (Moor, 2003), had stated that:

We may hope that machines will eventually compete with men in all purely intellectual fields. But which are the best ones to start with? Even this is a difficult decision. Many people think that a very abstract activity, like the playing of chess, would be best. It can also be maintained that it is best to provide the machine with the best sense organs that money can buy, and then teach it to understand and speak English. This process could follow the normal teaching of a child. Things would be pointed out and named, etc. Again I do not know what the right answer is, but I think both approaches should be tried. We can only see a short distance ahead, but we can see plenty there that needs to be done. (Turing, 1950)

The old fashioned approach (Hoffman & Pfeifer, 2015), some may say still contemporary approach, was to primarily research into 'mind-only' (Nilsson, 2009) AI technologies/systems. Through high level reasoning, researchers were optimistic that AI technology would quickly become a reality. Those early AI technologies were a disembodied approach using high level logical and abstract symbols. By the end of the 80s researchers found that the disembodied approach was not even achieving low level tasks humans could easily perform (Brooks, 1999). During that period many researchers stopped working on AI technologies and systems, and the period is often referred to as the 'AI winter' (Crevier, 1993; Newquist, 1994). Brooks then came forward with the proposition of 'Nouvelle AI' (Brooks, 1986), arguing that the old fashioned approach did not take into consideration motor skills and neural networks. Only by the end of the 90s did researchers develop statistical AI (Brooks, 1999) systems without the need for any high level logical reasoning; instead AI systems were 'guessing' through algorithms and machine learning. This signalled a first step towards humanistic artificial intelligence, as this resembles how humans make intuitive decisions (Pfeifer, 2002); here researchers suggest that embodiment improves cognition (Renzenbrink, 2012; Zarkadakis, 2018).

With embodiment theory Brooks argued that AI systems would operate best when computing only the data that was absolutely necessary (Steels & Brooks, 1995). Further in *Developing Embodied Multisensory Dialogue Agents* Paradowski (2011) argues that without considering embodiment, e.g. the physics of the brain, it is not possible to create AI technologies/systems capable of comprehension, and that AI technology "could benefit from strengthened associative connections in the optimization of their processes and their reactivity and sensitivity to environmental stimuli, and in situated human-machine interaction. The concept of

multisensory integration should be extended to cover linguistic input and the complementary information combined from temporally coincident sensory impressions" (Paradowski, 2011). With this historical analysis in mind one can discuss the paper's focus on power elites. Raz studied the procedures through which elites attain disciplinary power in society (Raz, 2009). Raz argues that the notion of the disciplinary power of elites in society is exchangeable with the disciplinary power of legislation and legal code. Raz explains that legal code is perceived by society as the custodian of public order. He further explains that by precluding objectionable actions, legislation directs society's activities in a manner appropriate to jurisprudence. Nevertheless, Raz did not demonstrate how legislation impacts on personal actions. This is where Foucault's theories on discipline and power come in. According to Foucault the disciplinary power of legislation leads to a self-discipline of individuals (Foucault, 1995). Foucault argues that the institutions of courts and judges motivate such a self-disciplining of individuals (Chen, 2017), and that self-disciplining rules serve "more and more as a norm" (Foucault, 1981, p. 144).

Foucault's theories are especially helpful in discussing how the "rule of truth" has disciplined civilisation and how power elites, as institutions, push through an adoption of AI technologies which seem to benefit mainly the upper-class. Discussions around truth, Foucault states, form legislation into something that "decides, transmits and itself extends upon the effects of power" (Foucault, 1986, p. 230). Foucault's theories help to explain how legislation, as an institution, is rolled out throughout society with very little resistance, or "proletarian counter-justice" (Foucault, 1980, p. 34). Foucault explains that this has made the justice system and legislation a for-profit system. With this understanding of legislation, and social justice, one does need to reflect further on Foucault's notion of how disciplinary power seeks to express its distributed nature in the modern state. Namely one has to analyse the distributed nature of those AI technologies, especially through networks and protocols, so that the link can now be made to AI technologies becoming "legally" more profitable, in the hands of the upper-class. If power generates new opportunities rather than simply repressing them, then, following Michel Foucault (1980a), more interaction and participation can extend and not simply challenge power relations. Foucault's text *The Subject and Power* (1982) offers a valuable insight into power relationships relevant also within AI technologies. It is the product of research that was undertaken by Foucault over a period of over twenty years. Foucault uses the metaphor of a chemical catalyst for a resistance which can bring to light power relationships, and thus allow an analysis of the methods this power uses: "[r]ather than analysing power from the point of view of its internal rationality, it consists of analysing power relations through the antagonism of strategies" (1982, p. 780). In *Protocol*, Galloway describes how these protocols changed the notion of power and how "control exists after decentralization" (2004, p. 81). Galloway argues that protocol has a close connection to both Deleuze's concept of 'control'

and Foucault's concept of biopolitics (Foucault, 2008, pp. 1978--1979) by claiming that the key to perceiving protocol as power is to acknowledge that "protocol is an affective, aesthetic force that has control over life itself" (2004, p. 81). Galloway suggests (2004, p. 147) that it is important to discuss more than the technologies, and to look into the structures of control within technological systems, which also include underlying codes and protocols, in order to distinguish between methods that can support collective production, e.g. sharing of AI technologies within society, and those that put the AI technologies in the hands of the powerful few. Galloway's argument in the chapter *Hacking* (2004, p. 146) is that the existence of protocols "not only installs control into a terrain that on its surface appears actively to resist it", but goes on to create the highly controlled network environment. For Galloway hacking is "an index of protocological transformations taking place in the broader world of techno-culture." (2004, p. 157).

In order to be able to regulate networks and AI technologies, control and censorship mechanisms are introduced to networks by applying them to devices and nodes. This form of surveillance, or dataveillance, might constitute a development akin to Michel Foucault's concept of "panopticism" (1977), "panoptic apparatus" (Zimmer, 2009, p. 5), defined as both massive collections and storage of vast quantities of personal data and the systemic use of such data in the investigation or monitoring of one or more persons. Laws and agreements like the *Anti-Counterfeiting Trade Agreement* (European Commission, 2007; Lambert, 2010), the *Digital Economy Act* and the *Digital Millennium Copyright Act* require surveillance of the AI technologies that consumers use in their "private spheres" (Fuchs, 2009; Medosch, 2010; Wolf, 2003), and can be used to silence "critical voices" (Movius, 2009). The censorship of truth, and the creation of fear of law through moral panics stand in opposition to the development of a healthy democratic use of AI technologies. Issues regarding the ethics of AI (Berkman Klein Center, 2018; Clark, 2018; Green, 2017; Lufkin, 2017) arise from this debate. Fitzpatrick expands on Foucault's theory, investigating the "symbiotic link between the rule of law and modern administration" (Fitzpatrick, 2002, p. 147). Fitzpatrick states that legal code is not only a consequence of disciplinary power, but that it also legalises dubious scientific experiments. Here again one can make the link to ethical questionable advances with AI technologies. Legislation, or legal code, Fitzpatrick argues, corrects "the disturbance of things in their course and reassert the nature of things" (ibid, p. 160). For Fitzpatrick legislation is not an all-embracing, comprehensive concept as argued by Dworkin (1986) and Hart (1961), but rather legislation is defined by elites. For Fitzpatrick legislation "changes as society changes and it can even disappear when the social conditions that created it disappear or when they change into conditions antithetical to it" (Fitzpatrick, 2002, p. 6). Furthermore, West (1993) suggests that the impact of disciplinary power through legislation on the belief system of individuals does not allow for an analytical, critical

engagement by individuals with the issues at stake. Legislation is simply regarded as given. In relation to the disciplinary power of AI technologies, issues with privacy, defamation and intellectual property laws are not being questioned. Nevertheless, West's argument that all individuals adhere to equivalent morals is improbable.

Adams and Brownsword (2006) give a more nuanced view of contemporary legislation. They argue that legislation aims to institute public order. Legislation sets up authoritative mechanisms whereby social order can be established and maintained, social change managed, disputes settled and policies and goals for the community adopted (ibid: 11). Adams and Brownsword go on to argue that legal code is skewed in favour of the upper-class and those who engage more with politics in society – examples of which could be the corporate sector producing AI technologies and business elites seeking to use AI technologies for profit. According to Adams and Brownsword there seems to be no unbiased, fair legislation or legal code, and the maintenance of public order must simply reproduce an unfair class society. If this is the case, following Adams and Brownsword argumentation, one can argue that indeed the adoption of AI technologies does not follow a utilitarian ethical code, benefiting society, but rather conforms to the interests of a small group, those owning AI technologies.

A further discussion of disciplinary power within the process of writing legal code is that of Chamblis and Seidman (1982), who argue that legislation is not produced through a process characterised by balanced, fair development, but rather by powerful elites writing legal code by themselves. Translating this again back to the adoption of AI technologies, it becomes evident that the freedom to engage with those technologies is left to those who have the financial means, and with it the legal means, to do so. According to Chamblis and Seidman, in a culture dominated by economics, legislation and technologies are being outlined and modelled by those powerful elites. The analysis of the theories above has attempted to show that the implementation of AI technologies might be construed as a project deriving from, and serving the interests of, the dominant class; following Foucault's terminology, this is achieved using the disciplinary power of legislation, through regimes of truths, over individuals. AI technologies, rather than benefiting society, could very well be implemented against society. The implementation of AI technologies follows legislation set out by elites, raising issues connected with privacy, national security, or intellectual property laws. On this note, Crook states that "there is the risk that their decisions are based on profit and loss rather than truth/justice and freedom of expression" (Crook, 2009, p. 94).

### **AI technologies and Restorative Justice: The Ethics of Care**

Having said this, the prospect could be raised that restorative justice might offer "a solution that could deliver more meaningful justice" (Crook, 2009, p. 310). With respect to AI technologies, and the potential inherent in them for AI crimes, instead of following a

retributive legislative approach, an ethical discourse (Courtland, 2018), with a deeper consideration for the sufferers of AI crimes (Fry, 2018) should be adopted. That said, acting ethically is more difficult than ever (Ito, 2017), due to the hyper expansion of big data and artificial intelligence (Bridle, 2018; Singh, 2018). Research into artificial intelligence has gone from being a public service undertaken mainly at universities to being run (and regarded) as businesses, run by big corporations such as Alphabet (parent company of Google) and Facebook, created to generate profit (Keeble, 2008). The companies need to attract a large number of paying customers. AI technologies have become workers in the market economy, rarely following any ethical guidelines (Kieran, 1998). One can ask: could restorative justice offer an alternative way of dealing with the occurrence of AI crimes (Etzioni, 2018; Goel, 2017)?

Millar and Vidmar described two psychological perceptions of justice (Vidmar & Miller, 1980). One is behavioural control, following the legal code as strictly as possible, punishing any wrongdoer (Wenzel & Okimoto, 2010), and second the restorative justice system, which focuses on restoration where harm was done. Thus an alternative approach for the ethical implementation of AI technologies, with respect to legislation, might be to follow restorative justice principles. Restorative justice would allow for AI technologies to learn how to care about ethics (Bostrom & Yudkowsky, 2014; Frankish & Ramsey, 2014). Fionda (2005) describes restorative justice as a conciliation between victim and offender, during which the offence is deliberated upon. Both parties try to come to an agreement on how to achieve restoration for the damage done, to the situation before the crime (here an AI crime) happened. Restorative justice advocates compassion for the victim and offender, and a consciousness on the part of the offenders as to the repercussion of their crimes. Tocqueville argued for one to live in liberty, "it is necessary to submit to the inevitable evils which it engenders." (Tocqueville, 2004)

One can argue that these evils are becoming more evident nowadays with the advance of AI technologies. For AI crimes punishment in the classical sense may seem to be adequate (Montti, 2018). Duff (2003) argues that using a punitive approach to punish offences educates the public. Okimoto and Wenzel (2010) refer to Durkheim's studies on the social function of punishment (Durkheim, 1960), serving to establish a societal awareness of what ought to be right or wrong. Christie (Christie, 1977b), however, criticises this form of execution of the law. He argues that, through conflict, there is the potential to discuss the rules given by law, allowing for a restorative process, rather than a process characterised by punishment and a strict following of rules. Christie states that those suffering most from crimes are suffering twice, as although it is the offenders being put on trial, the victims have very little say in courtroom hearings where mainly lawyers argue with one-another. It basically boils down to guilty or not guilty, and no discussion in between. Christie argues that running restorative conferencing sessions helps both sides to come to terms with what happened. The victims of AI crimes would not only be placed in front of a

court, but also be offered engagement in the process of seeking justice and restoration. Restorative justice might support victims of AI crimes better than the punitive legal system, as it allows for the sufferers of AI crimes to be heard in a personalised way, which could be adopted to the needs of the victims (and offenders). As victims and offenders represent themselves in restorative conferencing sessions, these become much more affordable (Braithwaite, 2003), meaning that the barrier to seeking justice due to the financial costs would be partly eliminated, allowing for poor parties to be able to contribute to the process of justice. This would benefit wider society and AI technologies would not only be defined by a powerful elite. Restorative justice could hold the potential not only to discuss the AI crimes themselves, but also to get to the root of the problem and discuss the cause of an AI crime. For Braithwaite (1989) restorative justice makes re-offending harder.

In such a scenario, a future AI system capable of committing AI crimes would need to have a knowledge of ethics around the particular discourse of restorative justice. The implementation of AI technologies will lead to a discourse (Sample, 2018b) around who is responsible for actions taken by AI technologies. Even when considering clearly defined ethical guidelines, these might be difficult to implement (Conn, 2017), due to the pressure of competition AI systems find themselves in. That said, this speculation is restricted to *humanised artificial intelligence* systems to be part of a restorative justice system, through the very human emotion of shame. Without a clear understanding of shame (Rawnsley, 2018) it will be impossible to resolve AI crimes in a restorative manner. Thus one might want to think about a humanised, cyborgian (Haraway, 1985; Thompson, 2010) proposal of a symbiosis between humans and technology, along the lines of Kasparov's advanced chess (Hipp et al., 2011), as in advanced jurisprudence (Baggini, 2018), a legal system where human and machine work together on restoring justice, for social justice.

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